THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

Interbasin Transfer Act
Performance Standards Guidance

INTRODUCTION

The Interbasin Transfer Act and regulations[1] require that the Water Resources Commission (WRC) base its review of a proposed interbasin transfer on the steps taken by the proponent to use viable inbasin sources, to undertake effective water conservation and management programs, and upon a review of the environmental effects of the proposed transfer. The Act and regulations describe eight criteria that the WRC must consider when making a decision to approve or deny an Interbasin Transfer application. This guidance describes performance standards provide for use by both applicants and the Commission to measure whether the criteria for effective water conservation and management programs are met. In addition, the application process is designed to provide the WRC with enough information to make a determination on the environmental impacts of the proposed project, as required under the regulations.

The performance standards are not new requirements. They are based on existing requirements found in the Interbasin Transfer Act and in the 1992 Massachusetts Water Conservation Standards.

Applicability

The performance standards apply only to "significant" interbasin transfers (i.e. those transfers of 1 million gallons per day or greater, or otherwise judged as significant by the WRC). Requests for Determination of Insignificance under the Interbasin Transfer Act are governed by the criteria listed under 313 CMR 4.04(4) and are not subject to these performance standards.

Application Process

The specific information required by the WRC from proponents of significant interbasin transfers is outlined in the regulations (313 CMR 4.04(5)). Application forms are available from the Department of Environmental Management's web site, www.state.ma.us/dem/programs/intbasin or by calling DEM's Office of Water Resources at 617-626-1250 or 617-626-1350. Applications must provide sufficient information to allow the Commission to compare the proponent's programs with the standards outlined in this guidance.

All proponents of significant interbasin transfers must comply with the regulations. However, as differing local conditions affect the type of information to be included in the application, it continues to be important that proponents meet with the Department of Environmental Management's (DEM) Office of Water Resources staff to discuss the application process before submitting an application for approval. This will help to ensure the applicant has correctly identified the information that must be provided in the application.

1 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D
Interbasin Transfer Regulations: 313 CMR 4.00

The Interbasin Transfer Act requires that applicants meet certain of the criteria before approval can be given. However, in two instances the Commission may approve applications for significant interbasin transfers when the criteria, as further described in this guidance, have not been fully met. These are (1) if the actions to meet the standards, and appropriate deadlines, are included as part of an enforcement order or emergency declaration issued by the Department of Environmental Protection or (2) if local conditions make it infeasible to meet a particular performance standard, as described below.

Local Conditions

The Commission recognizes that in certain cases, local conditions may prevent a proponent from meeting or exceeding the "yardstick" that has been described in this guidance, even after a substantial effort has been made. In these cases, the proponent should explain why that standard cannot be met, demonstrate an alternate method of meeting intent of the criteria, and document any efforts that have been undertaken in order to comply with the standard. Therefore, the standards in this guidance are presented as presumptions that can be rebutted in cases where local conditions or other extenuating circumstances must be taken into consideration.

Two-year Transition Period

Substantial lead time may be needed for a proponent to meet some of the standards. Therefore the WRC has ~~be considering whether to~~ defined a two-year transition period from August 12, 1999, the date these standards were formally adopted, to August 12, 2001. This transition period has now expired, therefore, if documentation of actions required by these performance standards is not provided, the application will be judged incomplete until such time as the documentation is provided. In cases where the applicant clearly has not taken the action required by the performance standards, the proponent will be discouraged from applying until the standard is met. If an applicant does not meet the performance standards, is not under an enforcement order or emergency declaration, or cannot justify noncompliance due to local conditions, as described above, but decides to apply never-the-less, the application will be denied. If other criteria are met, the proponent can reapply once the performance standards are met.

Environmental Review

Two criteria, #5, Reasonable Instream Flow and #8, "Cumulative Impacts", do not contain standards, as such. The Act makes it the WRC's responsibility to decide if a reasonable instream flow will be maintained by the proposed transfer and if the cumulative impacts of the transfer are acceptable. Therefore, instead of performance standards, this guidance provides a description of the basic information to be included in the application under these criteria. The types of data required for each transfer will differ depending on the basin, subbasin, and the amount and timing of the transfer, etc.

Organization

The performance standards are divided into three sections. The first section provides guidance for interbasin transfers of water. The second section provides guidance for interbasin transfers of wastewater, and the third section provides guidance for interbasin transfers of wastewater triggered by a water supply development. Within each of these sections the guidance outlines the eight criteria by which the WRC must evaluate applications and then describes the measures the WRC will use to evaluate applications for of the respective type of transfer. The full text of the criteria, as it appears in the regulations, is given in Appendix A.

INTERBASIN TRANSFERS FOR WATER SUPPLY

This section of the guidance provides an outline of the eight criteria of the regulations by which the WRC must evaluate a proposed transfer and then more fully describes the measures the WRC will use to evaluate applications for transfers of water against the criteria. For each criterion, an abbreviated version of the criteria from the regulations is provided *in italics*. Immediately following are the performance standards in standard type-face. The full text of 313 CMR 4.05 Criteria for Evaluation of Applications for Approval appears in Appendix A.

(1) MEPA Compliance

The MEPA regulations (301 CMR 11.03(4)(a)2) require an Environmental Notification Form (ENF) and a mandatory Environmental Impact Report (EIR) for any "(n)ew interbasin transfer of water of 1,000,000 or more gpd or any amount determined significant by the Water Resources Commission."

The intent of the Interbasin Transfer regulations (313 CMR 4.04(1)(c)) is that the EIR be used to address all issues required in the Interbasin Transfer application. The review of alternatives required under MEPA should include the review of viable alternatives as described in criterion 2.

~~In order for an applicant to be considered complete by the WRC~~Submittal of the EIR and Interbasin Transfer application should be concurrent. Therefore, proponents are urged to meet with DEM Water Resources staff before developing the EIR to ensure that analysis will satisfy the requirements under the Act.

The proponent must furnish a copy of the Secretary of Environmental Affairs certificate stating that the EIR properly complies with MEPA and its regulations to WRC staff so that the public comment and hearing process described in the Act can begin.

(2) Develop all viable sources in the receiving area

The following definitions appear in the regulations (313 CMR 4.02):
Viable Sources means a source which can provide drinking water that meets the current water quality standards promulgated by the Department of Environmental Quality Engineering (now the Department of Environmental Protection) *at a production cost which is reasonable to costs recently incurred elsewhere~~elsawhere~~ in the Commonwealth, and which can be used while preserving reasonable instream flow as determined by the same criteria provided to evaluate impacts on the donor basin hereinafter provided.*
Receiving Area means the area which makes use of the water supply which has been transferred between basins.

The proponent~~must~~ should use the EIR to discuss the water supply alternatives considered, but rejected. Reason for the rejection of these alternatives~~must~~ should be clearly stated. This information should be included as part of the Local Water Resources Management Plan required under Criterion #7. In addition, as stated in the regulations, a local source must not cause unacceptable environmental damage.

GUIDANCE ON DETERMINING ECONOMIC VIABILITY OF IN-BASIN SOURCES

The decision on whether an in-basin alternative is viable is a case-specific decision made by the Water Resources Commission after reviewing the interbasin transfer application and EIR. There is no fixed standard by which economic *viability* is determined. Rather, this guidance outlines how proponents should provide cost and other economic data. This information only needs to be provided by proponents who claim that in-basin alternatives for water supply are not economically viable.

Reminder: Economic viability is only one of three reasons why an in-basin alternative may not be viable, the other two being technical feasibility and environmental impacts of using an in-basin source. It may be one of these reasons, or a combination of reasons why a proponent feels an in-basin alternative is not viable.

- **Costs:** Cost of in-basin option compared to the cost of the proposed interbasin transfer and compared to the costs of similar projects recently developed elsewhere in the Commonwealth presented as a net-present value of the capital, operating & maintenance costs, and salvage values of the projects. The discount rate used for this analysis should be the rate used by the U.S. Environmental Protection Agency. In addition, the costs of the alternatives should be compared to overall cost of providing service to demonstrate the marginal costs of the different alternatives (this marginal cost can be reflected in its effect on rates, as described below). This type of analysis provides life-cycle costs comparison between the alternatives and projects recently developed elsewhere in the Commonwealth. Proponents should compare these costs to those of other similar projects in the state to determine if the costs associated with the in-basin option*s* are reasonable when compared to costs recently incurred elsewhere in the Commonwealth. When providing costs for conservation measures, the proponent should also identify the costs avoided by not constructing a water supply project that would be otherwise needed.

- **Rates:** Effect of the in-basin and interbasin transfer options on the water rates or on the cost per user served over the life of the project. Communities should compare the current and future rates against other similar communities and against the ability of their rate payers to pay the rates by presenting the rates as a percentage of median household income.

(3) Must have implemented all practical water conservation measures

1. A full leak detection survey ~~must~~ should have been completed within the previous two years of the application. The proponent~~must~~ should provide documentation of their leak detection survey and of the repair of leaks identified during the survey. Leak detection surveys should be completed by methods at least as comprehensive as those described in the MWRA's leak detection regulations (360 CMR 12.00).

2. The water supply system ~~must~~ should be 100% metered, including public facilities served by the proponent. A program of meter repair and/or replacement must be in place. Documentation of annual calibration of master meters and a description of the calibration program ~~must~~ should be included in the application.

3. Unaccounted-for water should be 10% or less. The proponent ~~must~~ should provide documentation of unaccounted-for water, in both gallons and percentage of the total water pumped and withdrawn, for each of the past five years. The definition of accounted-for and unaccounted-for water for use in Interbasin Transfer applications is given in Appendix C. The plan by which the community intends to ~~meet this goal must~~ maintain or reduce this level should be included in the water resources management plan required under Criterion #7.

4. The proponent ~~must~~ should provide documentation to show that there are sufficient sources of funding to maintain the system, including covering the costs of operation, proper maintenance, planned capital improvements, and water conservation. The rate structure must encourage water conservation. Appendix D provides guidance on developing rate structures to encourage water conservation.

5. The proponent ~~must~~ should bill its customers at least quarterly based on actual meter readings. Bills should be easily understandable to the customer (e.g. providing water use in gallons and including comparison of the previous year's use for same period).

6. A drought/emergency contingency plan, as described in 313 CMR 4.02, ~~must~~ should be in place. This plan should include seasonal use guidelines, measures for voluntary and mandatory water use restrictions and describe how these will be implemented. There should be a mechanism in place to tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available. The plan should become part of the Local Water Resources Management Plan required under Criterion #7.

7. All government and other public buildings under the control of the proponent should~~must~~ have been retrofit with water saving devices.

8. Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.

9. If the community's residential gallons per capita/day ~~must~~is greater than 65, the

proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.

10. A broad-based public education program which attempts to reach every user at least two times per year, through such means as mailings, billboards, newspaper articles, cable television announcements or programs, or the use of other media, should ~~must~~ be in place. Water suppliers should refer to the WRC's 1992 "Water Conservation Standards for the Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures.

11. A program which identifies, ranks and works with all commercial, industrial and institutional customers according to amount of use in order to determine areas where the greatest potential for water savings exists, should be in place. The water supplier should make regular contact with these users to promote water conservation. Materials on water reuse and recirculation techniques should ~~must~~ be provided, where appropriate.

12. A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.

13. As part of the local water resources management plan, there should be a long-term water conservation program, which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts, in place. This plan should reflect the goal of maintaining unaccounted-for at 10% or less of all water used, and of reducing future residential water use through a comprehensive residential water conservation program, if residential gpcd is greater than 65. The water conservation program should also have a goal of operating the system to balance water supply with other environmental needs. If the transfer is approved, the proponent will need ~~must~~ to submit a copy of its Public Water Supply Annual Statistical Report (required by DEP) to the Commission annually to demonstrate the continued effectiveness of the program.

(4) Have implemented a Forestry Management Program

For **surface** water sources currently used by the proponent, a written plan, which conforms with the 1996 DEP guidance for Developing a Local Surface Water Supply Protection Plan, should be in place for all watershed lands greater than ten (10) acres and under the control of the proponent ~~must~~. The plan should ~~must~~ be approved by DEM or other appropriate agency and include:

1) A description of the property, including adequate boundary maps.
2) An inventory of its natural features with a special emphasis on the forest resource - forest stand or type maps and a quantitative assessment of forest growth, health and other attributes.

3) An inventory of water resources, including reservoirs, inlet and outlet streams, wetlands, and other water bodies
4) An inventory of other natural and cultural features (such as rare or threatened specie habitat, ACECs, etc).
5) A 10 year plan of action listing proposed activities and their priorities.
6) A listing of the forestry best management practices (BMP) to be implemented. See Massachusetts Forestry Best Management Practices Manual available from DEM Division of Forest and Parks.
7) All timber harvesting activities must be carried out under a DEM-approved Forest Cutting Plan as described in 304 CMR 11.00, the Forest Practices regulations.
8) Evidence of implementation.
9) ~~he proponent must~~Demonstration that the plan of action can be carried out in a sustainable fashion
10) If the transfer is approved, the proponent will be expected to submit periodic reports to the WRC concerning the effectiveness of its program on water resources.

(5) Maintain Reasonable Instream Flow

The Act requires the WRC to determine that a reasonable instream flow will be maintained if the proposed transfer is approved. The regulations require the WRC to consider a broad range of environmental information, including the natural variability of flows in the affected river, flood flows, aquatic base flow, 7Q10 flow, stage, velocity, sediment regimen, etc.[2] when making a determination on whether or not a proposed interbasin transfer leaves a "reasonable instream flow". Therefore, after review and analysis by its technical staff, the WRC must determine that this transfer would not have an adverse impact on these resources or on the other resource values listed under this criterion in the regulations. This criterion does not have a specific measure of performance. In order for the Commission to evaluate this criteria, the proponent will need to supply information required under 313 CMR 4.04(5)7, including:

1) A hydrograph showing the potential changes induced by the transfer.

2) Available information concerning resources named in the regulations that could be affected by the proposed transfer. This data should ~~must~~ also include any site specific information that may be requested by the EOEA agencies, as well as daily hydrographs which show the recorded streamflow, with the streamflow resulting from this transfer superimposed, for representative drought, normal and wet years. These years are to be determined in consultation with DEM's Office of Water Resources.

3) A table showing daily streamflow for the representative years listed above, the

2 Refer to 313 CMR 4.04(5)7.c and 313 CMR 4.05(5)

streamflow resulting from this transfer and the percent reduction in streamflow resulting from this transfer.

(6) Provide results of the pumping test

The proponent must submit the results of the DEP-approved pumping test for any Interbasin Transfer Act application involving a new ground water supply source.

(7) Develop a Local Water Resources Management Plan

The goal of the plan is to integrate water supply and wastewater planning at the community, water district or water authority level. The plan should use existing information wherever possible to evaluate a range of alternatives and assist the proponent in making decisions to meet and control future water supply and wastewater needs in ways that minimize the impact on environmental resources, while providing a water supply and wastewater system that meets public health standards. The plan should address water and wastewater needs through infrastructure and institutional arrangements and include drought/emergency management plans and conservation programs. The plan should ~~must~~ include a comprehensive program to comply with state water conservation standards and to reach or maintain the goal of ≤ 10% unaccounted-for water and of reducing future residential water use through a comprehensive residential water conservation program. ~~the proposed goal~~ The plan also should~~must~~ describe how the water supply system will be operated so as to minimize environmental impacts, while meeting public health and safety needs.

The intention is that this plan will be used by the community, water district or water authority for planning purposes. It is not intended to be a detailed facilities plan or river basin plan. The proponent should meet with DEM, Office of Water Resources staff to discuss the scope of the local water resources management plan before submitting its application

An outline of the local water resources management plan is provided in Appendix B.

(8) Cumulative Impacts

The proponent must provide sufficient data to enable to Commission to evaluate whether the effects of the proposed transfer exacerbate the impacts of all past, authorized or proposed transfers on streamflows in the donor basin. This would include analysis of any water supply sources or sewer systems that have been recently developed or approved and therefore not captured by the historic hydrographs, consideration of any water supply sources in the new source approval or Water Management Act permitting processes, sewering plans under development, etc.

INTERBASIN TRANSFER ACT
PERFORMANCE STANDARDS GUIDANCE

INTERBASIN TRANSFERS OF WASTEWATER

Introduction

This section of the guidance provides an outline of the eight criteria of the regulations by which the WRC must evaluate a proposed transfer and then more fully describes the measures the WRC will use to evaluate applications for transfers of wastewater against the criteria. For each criterion, an abbreviated version of the criteria from the regulations is provided *in italics*. Immediately following are the performance standards in standard type-face. The full text of 313 CMR 4.05 Criteria for Evaluation of Applications for Approval appears in Appendix A.

(1) MEPA Compliance

The MEPA regulations (301 CMR 11.03(4)(a)2) require an Environmental Notification Form (ENF) and a mandatory Environmental Impact Report (EIR) for any "(n)ew interbasin transfer of water of 1,000,000 or more gpd or any amount determined significant by the Water Resources Commission."

The intent of the Interbasin Transfer regulations (313 CMR 4.04(1)(c)) is that the EIR be used to address all issues required in the Interbasin Transfer application. The review of alternatives required under MEPA should include the review of viable alternatives as described in criterion 2.

Submittal of the EIR and Interbasin Transfer application should be concurrent. Therefore, proponents are urged to meet with DEM Water Resources staff before developing the EIR to ensure that analysis will satisfy the requirements under the Act.

The proponent must furnish a copy of the Secretary of Environmental Affairs certificate stating that the EIR properly complies with MEPA and its regulations to WRC staff so that the public comment and hearing process described in the Act can begin.

(2) Develop all viable sources in the receiving area

In 1987, the WRC developed guidance for interpreting the Interbasin Transfer Act's regulations to apply to a wastewater transfer. The following definitions are from that guidance:

Present rate of a wastewater conveyance system is the hydraulic capacity plus any surcharging, as determined by DEP, of the wastewater system that actually facilitates the transfer out-of-basin.

A viable local source is a cost-effective, technologically feasible, environmentally

sound wastewater treatment system which treats and discharges wastewater within the basin of origin, and has been approved by DEP. Such systems can include, but are not limited to, conventional Title 5 systems, groundwater discharge systems, NPDES-regulated surface water discharge systems, alternative/innovative on-site systems or package treatment plants.
Receiving area is the community(ies) or portion of community(ies) whose wastewater is collected for discharge out of basin via an interbasin transfer.

The proponent should ~~must~~have completed a DEP-approved facilities plan which evaluates potential in-basin sources of disposal, including Title 5, groundwater and surface water discharges, as described in DEP's Comprehensive Wastewater Management Planning Guidance. If a proponent's facilities plan was completed prior to development of DEP's Comprehensive Wastewater Management Planning Guidance, but is being actively implemented, and DEP concurs that these issues have been adequately addressed, this can be substituted for a more recent plan. The proponent should have also investigated the feasibility of implementing DEP's wastewater reuse policy. Analysis of viable inbasin sources should be part of the alternatives analysis of the EIR.

GUIDANCE ON DETERMINING ECONOMIC VIABILITY OF IN-BASIN SOURCES

The decision on whether an in-basin alternative is viable is a case-specific decision made by the Water Resources Commission after reviewing the interbasin transfer application and EIR. There is no fixed standard by which economic *viability* is determined. Rather, this guidance outlines how proponents should provide cost and other economic data. This information only needs to be provided by proponents who claim that in-basin alternatives for wastewater disposal are not economically viable.

Reminder: Economic viability is only one of three reasons why an in-basin alternative may not be viable, the other two being technical feasibility and environmental impacts of using an in-basin source. It may be one of these reasons, or a combination of reasons why a proponent feels an in-basin alternative is not viable.

- **Costs:** Cost of in-basin option compared to the cost of the proposed interbasin transfer and compared to the costs of similar projects recently developed elsewhere in the Commonwealth presented as a net-present value of the capital, operating & maintenance costs, and salvage values of the projects. The discount rate used for this analysis should be the rate used by the U.S. Environmental Protection Agency. In addition, the costs of the alternatives should be compared to overall cost of providing service to demonstrate the marginal costs of the different alternatives (this marginal cost can be reflected in its effect on rates, as described below). This type of analysis provides life-cycle costs comparison between the alternatives and projects recently developed elsewhere in the Commonwealth. Proponents should compare these costs to those of other similar projects in the state to determine if the costs associated with the in-basin options are

reasonable when compared to costs recently incurred elsewhere in the Commonwealth. When providing costs for conservation measures or I/I removal, the proponent should also identify the costs avoided by not constructing a wastewater project that would be otherwise needed.

- **Rates:** Effect of the in-basin and interbasin transfer options on the sewer rates or on the cost per user served over the life of the project. Communities should compare the current and future rates against other similar communities and against the ability of their rate payers to pay the rates by presenting the rates as a percentage of median household income.

(3) Must have implemented all practical water conservation measures

For wastewater transfers, the WRC interprets "all practical measures to conserve water" to include, but not be limited to:

1) ~~must~~ An active program to eliminate sources of inflow and infiltration that are cost- and value-effective to remove in the donor basin. These sources should have been identified in an Inflow and Infiltration (I/I) study or Sewer System Evaluation Study (SSES) that has been developed in accordance with DEP's "Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey".

This program should~~must~~ have received approval from the governing sewer system authority (DEP, MWRA or other regional sanitary district). The value effective analysis should be based on factors including, but not limited to: whether the basin or subbasin(s) from which the wastewater is being transferred is characterized as stressed (refer to DEM basin report or other appropriate document), the existence of sewer overflow conditions and magnitude of impacts on public and environmental health, and the overall levels of infiltration and inflow. The amounts of water lost through I/I should be placed in the context of the donor basin and reflect impacts to the environmental resources listed under 313 CMR 4.05(5) (Criterion 5).

2) If an existing wastewater transfer is in place, the proponent should have installed flow meters at location(s) sufficient to document wastewater flows out of basin. Use of regional sewer meters which document wastewater flows out of basin is acceptable where these meters are in place. Documentation on meter calibration should be included with the application.

Proponents should provide at least two years of data on the components of existing wastewater flow (sanitary, inflow, infiltration) with the application. Refer to DEP's 1993 Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey (Section 5) for a methodology for estimating the components of wastewater flow.

3) To the extent the EIR identifies impacts that may need to mitigated, the proponent should propose measures to mitigate these impacts. Proponents should consider such measures as additional I/I reduction, impervious surface remediation, groundwater recharge, or stormwater management programs consistent with DEP stormwater guidance that keep water in the donor basin.

4) The proponent must demonstrate a commitment to continue to implement recommendations of the I/I removal program. For transfers that are approved, proponents can expect to be requested to submit annual reports to the WRC on these measures

5) A DEP-approved Operation and Maintenance plan for the wastewater system, as described in DEP's "Guidelines for Performing Operations and Maintenance on Collection Systems" (August 1989 or latest edition) should ~~must~~be in effect and should have been developed or updated within the five years of submitting an application for Interbasin Transfer.

6) For wastewater transfers where the proponent has control over the water supply system, the proponent should describe its program for implementing a water conservation program based on the state water conservation standards.

(4) Have implemented a Forestry Management Program

This criterion is not applicable to a wastewater transfer.

(5) Maintain reasonable instream flow

The Act makes it the WRC's responsibility to determine that a reasonable instream flow will be maintained if the proposed transfer is approved. Therefore, after review and analysis by its technical staff, the WRC must determine that this transfer would not have an adverse impact on the natural variability of flows in the affected river, will not significantly prolong low flow events, and will not result in significant adverse impact to the resource values listed under this criterion in the regulations including flood flows, aquatic base flow, 7Q10 flow, stage, velocity, sediment regimen, etc[3]. This criterion does not have a specific measure of performance. In order for the Commission to evaluate this criteria, the proponent will need to supply information required under 313 CMR 4.04(5)7, including:

1) A hydrograph showing the potential changes induced by the transfer.
2) Make every effort to secure and provide information concerning resources named in the regulations that could be affected by the proposed transfer. This data should also include any site specific information that may be requested by the EOEA

3 Refer to 313 CMR 4.04(5)7.c and 313 CMR 4.05(5)

agencies., ~~as well as daily hydrographs which show the recorded streamflow, with the streamflow resulting from this transfer superimposed, for representative drought, normal and wet years. These years are to be determined in consultation with DEM's Office of Water Resources.~~

Close consultation with DEM's Office of Water Resources is recommended to insure that the information provided reflects the conditions of a wastewater transfer.

(6) Provide results of the pumping test

This is not applicable to a wastewater transfer.

(7) Develop a Local Water Resources Management Plan

The goal of the plan is to integrate water supply and wastewater planning at the community, sewer district or sewer authority level. The plan should use existing information wherever possible to evaluate a range of alternatives and assist the proponent in making decisions to meet and control future water supply and wastewater needs in ways that minimize the impact on environmental resources, while providing a water supply and wastewater system that meets public health standards. The plan should address water and wastewater needs through infrastructure and institutional arrangements and include drought/emergency management plans and conservation programs. The plan should include a comprehensive program to comply with state water conservation standards and to reach or maintain the goal of $\leq$ 10% unaccounted-for water and of reducing future residential water use through a comprehensive residential water conservation program. The plan also should describe how the water supply system will be operated so as to minimize environmental impacts, while meeting public health and safety needs.

The intention is that this plan will be used by the community, sewer district or sewer authority for planning purposes. It is not intended to be a detailed facilities plan or river basin plan. The proponent should meet with DEM, Office of Water Resources staff to discuss the scope of the local water resources management plan before submitting its application

An outline of the local water resources management plan is provided in Appendix B.

(8) Cumulative Impacts

The proponent must provide sufficient data to enable to Commission to evaluate whether or not the effects of the proposed transfer exacerbate the impacts of all past, authorized or proposed transfers on streamflows in the donor basin. This would include analysis of any water supply sources or sewer systems that have been recently developed or approved, consideration of any water supply sources in the new source approval or Water Management

Act permitting processes, sewering plans under development, etc.

INTERBASIN TRANSFER ACT GUIDANCE

WASTEWATER TRANSFER TRIGGERED BY DEVELOPMENT OF A LOCAL WATER SUPPLY SOURCE

In certain cases, the Interbasin Transfer Act is triggered by development of a water supply, to be used in the "donor" basin within a community, but transported out of basin and out of the community for treatment and disposal as wastewater. In these cases, the performance standards for both types of transfers will apply, in varying degrees, as described below.

For each criterion, an abbreviated version of the criteria from the regulations is provided *in italics*. Immediately following are the performance standards in standard type-face. The full text of 313 CMR 4.05 Criteria for Evaluation of Applications for Approval appears in Appendix A.

(1) *Compliance with MEPA*

This criterion, which is the same for both water and wastewater transfers, must be met.

(2) *Develop all viable sources in the receiving area*

The performance standards for a wastewater transfer apply to this type of transfer because it is considered a wastewater transfer.

(3) *Must have implemented all practical conservation measures*

The performance standards for **both** water and wastewater transfers apply because both water conservation and I/I removal minimize the transfer out of basin.

(4) *Forestry Management Plan*

The performance standards for water transfers apply if the community developing the water supply source has existing surface water sources.

(5) *Maintain reasonable instream flow*
The information required for water transfers applies.

(6) *Provide pump test results*
Applies if the water source being developed is a ground water source.

(7) *Local Water Resources Management Plan*
These standards, which are the same for both water and wastewater transfers, must be met.

(8) *Cumulative Impacts*
This information, which is the same for both water and wastewater transfers, must be met.

Appendix A
Interbasin Transfer Act Regulations
Criteria for Evaluation and Approval

313 CMR 4.05: *Criteria for Evaluation of Applications for Approval: The Commission shall consider the following criteria in making its decision to approve or deny a proposed action to increase over the present rate of interbasin transfer of waters.*

(1) That an environmental review, pursuant to M.G.L. c. 30, §§61 and 62H, inclusive, if required, has been complied with for the proposed increase.

(2) That all reasonable efforts have been made to identify and develop all viable sources in the receiving area of the proposed interbasin transfer.

(3) That all practical measures to conserve water have been taken in the receiving area, including but not limited to:

(a) The identification of distribution system sources of lost water, and where cost effective, the implementation of a program of leak detection and repair.

(b) Metering of all water users in the receiving area and a program of meter maintenance.

(c) Implementation of a rate structure which reflects the costs of operation, proper maintenance, proposed capital improvements, and water conservation and which encourage the same.

(d) Public information programs to promote water conservation, the use of water conserving devices, and industrial and commercial recycling and reuse.

(e) Contingency plans for limiting the use of water during seasonal or drought shortages.

(f) Implementation of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Quality Engineering (now Environmental Protection) published in 310 CMR 22.20.

(4) That a comprehensive forestry management program which balances water yields, wildlife habitat and natural beauty on watershed lands presently serving the receiving area and under the control of the proponent has been implemented.

(5) That reasonable instream flow in the river from which the water is transferred is maintained. The Commission shall take into consideration in determining reasonable instream flow the impact of the proposed interbasin transfer on the streamflow dependent ecosystems and water uses to include:

(a) Length of the stream below the point of withdrawal.

(b) Effects on flood flows, intermediate flows and low flows.

(c) Effect on groundwater and surface water elevations.

(d) Significance of indigenous and anadromous fisheries and fauna and effects thereon

(e) Significance of wetlands and dependent flora and fauna and effects thereon.
(f) Effect on water quality, recreational uses, aesthetic values, areas of critical environmental concern and areas protected under Article 97 of the Amendments to the Massachusetts Constitution.
(g) Effect on established riparian uses and uses dependent on recharge from stream flow.
(h) Effect on hydropower production
(i) Effect on water withdrawals and undeveloped rights within the donor basin.
(j) Effect on other instream uses.

(6) In the case of groundwater withdrawals, the results of the pump test will be used to indicate the impact of the proposed withdrawal on static water levels, the cone of depression, the potential impacts on adjacent wells and lake and pond levels, and the potential to affect instream values as listed in 313 CMR 4.05(5)(a) through (j).

(7) That the communities and districts in the receiving area have adopted or are actively engaged in developing a local water resources management plan.

(8) The Commission shall consider the impacts of all past, authorized or proposed transfers on streamflows in the donor basin.

Appendix B

Local Water Resources Management Plan Outline

The goal of the plan is to integrate water supply and wastewater planning at the community, water or sewer district, or water or sewer authority level. The plan should use existing information wherever possible to evaluate a range of alternatives and assist the proponent in making decisions to meet and control future water supply and wastewater needs in ways that minimize the impact on environmental resources, while providing a water supply and wastewater system that meets public health standards. The plan should address water and wastewater needs through infrastructure and institutional arrangements and include drought/emergency management plans and conservation programs. The plan should include a comprehensive program to comply with state water conservation standards and to reach or maintain the goal of $\leq$ 10% unaccounted-for water and of reducing future residential water use through a comprehensive residential water conservation program. The plan also should describe how the water supply system will be operated so as to minimize environmental impacts, while meeting public health and safety needs.

The intention is that this plan will be used by the community, water or sewer district or water or sewer authority for planning purposes. It is not intended to be a detailed facilities plan or river basin plan. The proponent should meet with DEM, Office of Water Resources staff to discuss the scope of the local water resources management plan before submitting its application. This plan should include the following information. However, this information may need to be modified depending on the circumstances of the system (whether regional or local):

Background

- Description of hydrology of watershed and subbasins (available from DEM's river basin reports, USGS reports, and/or EOEA Watershed Plans).
- Brief history and analysis of water supply system and water use.
- A list of all water, sewer, stormwater and other water resources related plans and information available for the community.

Water Supply

- Identify existing and potential water supplies in the community, Zone II delineations, Interim Wellhead Protection Areas, and/or Zones A and B delineations for surface water sources, and watershed boundaries.
- Describe source water protection programs, including compliance with DEP source water protection regulations.
- Identification of all water supply options, including local, regional and conservation options.

Wastewater and stormwater

- Describe existing wastewater and stormwater disposal methods. This should incorporate information in any existing DEP-approved water supply and wastewater facilities plan and should provide the percentage of town sewered (by population), areas of town sewered and the location of wastewater discharge.

- For municipalities with sewer systems, provide a description of the wastewater management plan, with data on components of the wastewater (infiltration, inflow, sanitary).
- A discussion of the DEP wastewater reuse policy, as applied to the community should be included.

Natural Resources

- Describe streamflow conditions in basin (available from DEM's river basin reports and/or USGS reports).
- Describe major water resource features and sensitive habitats, including rivers, streams and ponds, wetlands, vernal pools, fisheries, coastal areas and Areas of Critical Environmental Concern (ACECs) (available from DEM's river basin reports, DEM's ACEC program, EOEA Watershed Action Plan, Riverways Program Shoreline Surveys, DFWELE's Fisheries and Natural Heritage programs, USGS reports, any river management plans developed pursuant to National Wild and Scenic River Studies, reports developed by local environmental groups such as watershed associations or land trusts and/or regional planning agencies).

Regional Plans

- Describe any existing regional or watershed plans and how these plans relate to the plans of the local community. Refer to reports and plans developed by regional planning agencies, local watershed associations, and other appropriate regional and/or non-governmental agencies.

Future Plans

- Analysis of existing zoning and master plan, including a build-out analysis.
- Identification of future water and wastewater needs and various alternatives for meeting these needs.
- Summary and evaluation of water infrastructure plans based on build-out and future needs.
- Summary and evaluation of wastewater and stormwater infrastructure plans based on build-out and future needs.
- Overall summary based above information.

Analysis and Conclusions

- Discussion of a plan to meet future water and wastewater needs in a way that minimizes existing and potential future impacts to water and natural resources and describes plans for mitigating these impacts and the mechanisms through which the plan will be implemented.
- An action plan, with timetables for the implementation of the recommendations of the plan, a budget and identification of people responsible for implementation.

APPENDIX C
ACCOUNTED-FOR AND UNACCOUNTED-FOR WATER USES

For the purposes of Interbasin Transfer review, water uses should be broken down by specific category, as designated in the DEP Public Water Supply Annual Statistical Report.

Accounted-for water includes:

- Residential use
- Agricultural use
- Commercial use
- Industrial use
- Municipal use, including fire fighting, street cleaning, hydrant maintenance, and hydrant use for sewer flushing, where these uses can be confidently estimated. In the case of water use that is "confidently estimated" documentation of how the estimate was arrived at will need to be provided.
- Sales to other public water suppliers
- Process water, including bleeders, water main flushing (including new water mains), new water main filling, filter backwash, etc. where these uses can be confidently estimated. In the case of water use that is "confidently estimated" documentation of how the estimate was arrived at will need to be provided.
- Institutional/Tax exempt uses

Unaccounted-for water is the difference between water pumped or purchased and water that is metered or confidently estimated.

Unaccounted-for water should include:

- Master Meter Inaccuracies
- Domestic and Non-Domestic Meter Underregistration
- Errors in estimating for stopped meters
- Overregistering revenue meters
- Unauthorized hydrant openings
- Unavoidable leakage
- Recoverable leakage
- Illegal connections
- Standpipe overflows
- Data processing errors

Water suppliers may want to estimate the amount of unaccounted-for water by category, as required in Section D6 of DEP's *Public Water Supply Annual Statistical Report (1998)*. This is will enable them to target suspected sources of unaccounted-for water for reduction.

APPENDIX D
GUIDANCE ON THE DEVELOPMENT OF RATE STRUCTURES
WHICH ENCOURAGE WATER CONSERVATION

The Interbasin Transfer regulations require proponents to implement a rate structure which reflects the costs of operation, proper maintenance, proposed capital improvements, and water conservation and which encourage the same (313 CMR 4.05(3)(c)).

Guidance: Proponents should refer to the American Water Works Association's Manual of Water Supply Practices: Water Rate Structures and Pricing, Seventh Edition (AWWA M34) and the 1992 WRC Water Conservation Standards for the Commonwealth of Massachusetts to help demonstrate that the portion of this criterion dealing with rate structures has been met.

Rate development principals:

- Rate structures, including the elements of a rate structure that are intended to encourage conservation, should reflect the particular situation and needs of the community.
- Rates that encourage conservation can also achieve other objectives, such as lifeline rates or low-income affordability rates.
- Rates are only one component of a comprehensive water conservation program and should be designed to support and work with other elements of the program.

Funding Sources:

1. Is your water supply funded through an enterprise account or is some other accounting procedure used? If some other accounting procedure is used, describe. Are water supply revenues dedicated for water supply system use?
2. List the major cost categories covered by your rate revenues. Does it reflect the cost of operation, proper maintenance, proposed capital improvements, source protection and water conservation?
3. What elements of your water supply program are not covered by rates? How are these elements funded?

Rate Structure:

1. Provide your current rate structure.
2. Provide date of your most recent rate structure revision and a short description of the changes made.
3. Are there separate rates for different types of customers (residential, commercial, industrial, etc.)?
4. Describe how your rate structure encourages conservation. If your rate structure includes any of the following elements, describe their effectiveness.

- Increasing block rates and number of customers in each block
- Seasonal rates; include the number of residential customers which are billed at a higher use category due to seasonal water use and an average cost differential in a water bill for a customer whose seasonal use results in being billed at a higher use category.

- Excess use rates
- Goal-based rates
- Drought rates
- Second meter rates